

Update on the B lifetime analysis

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Mar-12 2003 semileptonic meeting

Contents

- Update on fitter performance check
- Look for hints to solve the problems

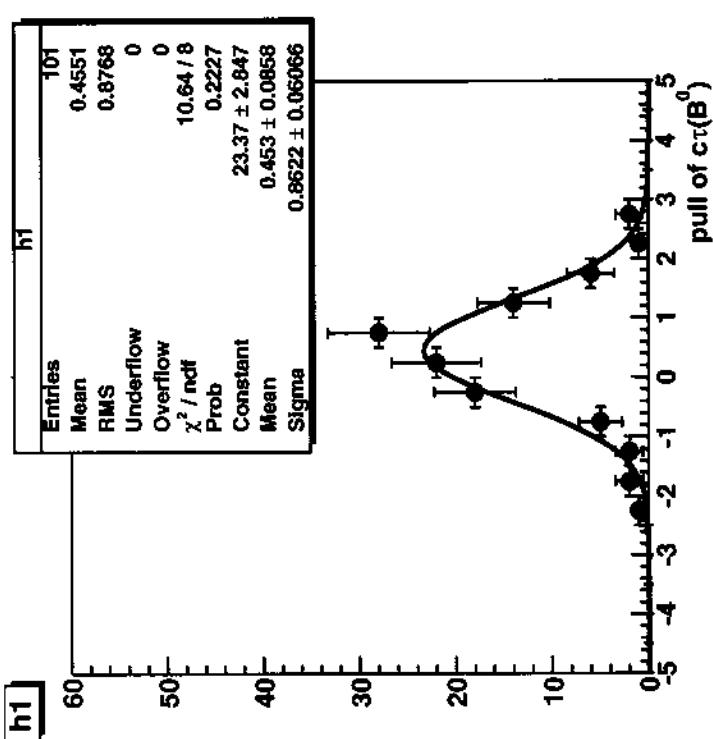
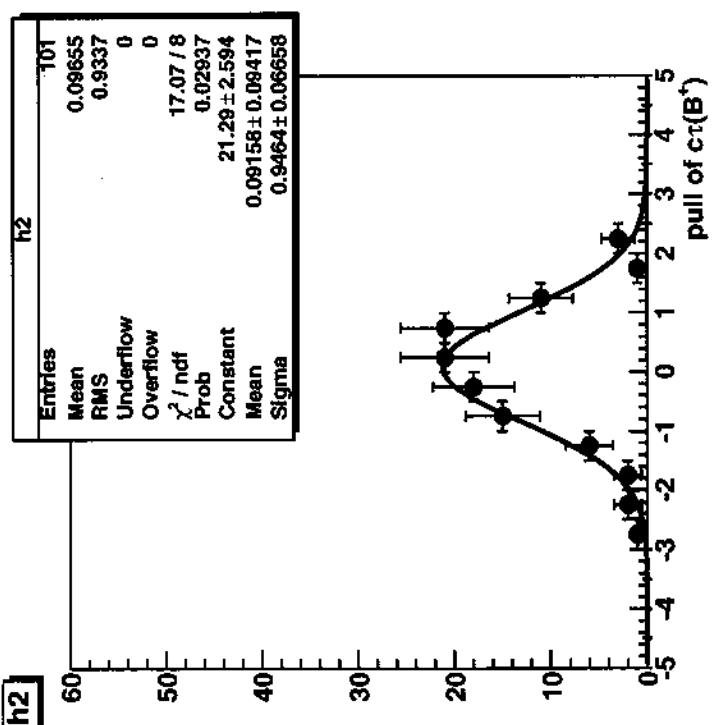
5k events \times 100 times

(Update)

Check for filter
with toy MC

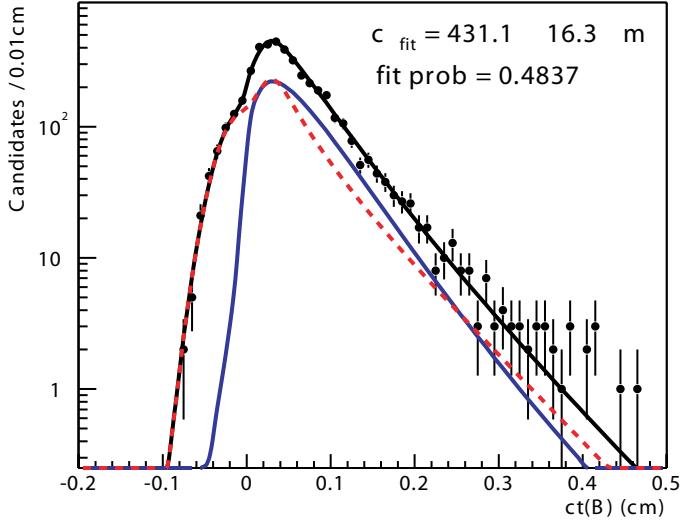
| h3 | |
|-----------------------|-----------------------|
| Entries | 101 |
| Mean | -0.2717 |
| RMS | 0.9263 |
| Underflow | 0 |
| Overflow | 0 |
| χ^2 / ndf | 34.14 / 6 |
| Prob | 3.836e-05 |
| Constant | 21.69 \pm 2.543 |
| Mean | -0.2847 \pm 0.09242 |
| Sigma | 0.9268 \pm 0.06535 |

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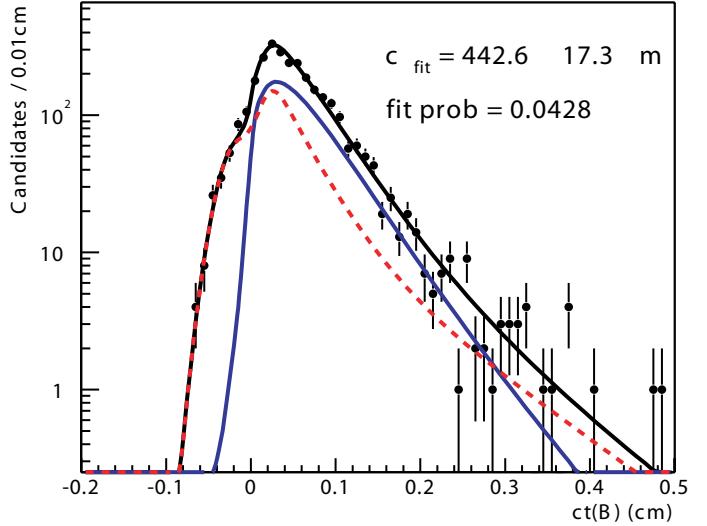


Slicing on muon P_T

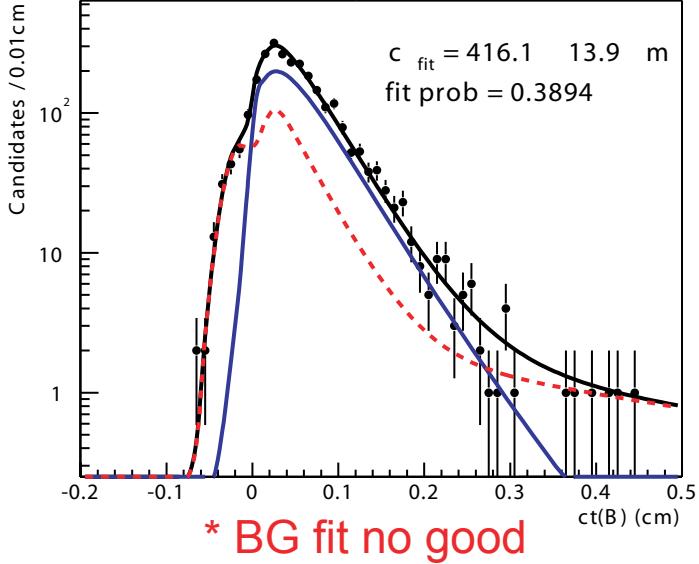
$5 > P_T(\mu) > 4 \text{ GeV}$



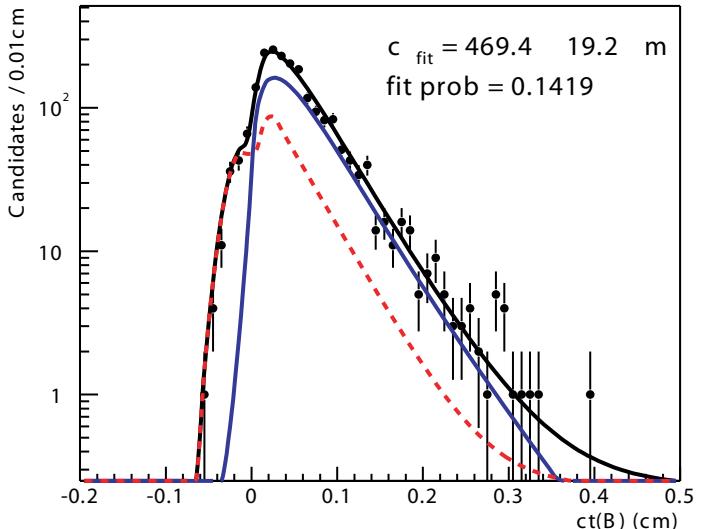
$6 > P_T(\mu) > 5 \text{ GeV}$



$8 > P_T(\mu) > 6 \text{ GeV}$



$P_T(\mu) > 8 \text{ GeV}$



Looks like better for higher $P_T(\mu)$...

Slicing on $M(\ell + D^0)$

window

$C\tau_{\text{fit}}$

$M < 3.2 \text{ GeV}$

$431.9 \pm 26.1 \mu\text{m}$

$3.2 < M < 3.7 \text{ GeV}$ $430.6 \pm 13.3 \mu\text{m}$

$3.7 < M < 4.2 \text{ GeV}$ $461.1 \pm 15.2 \mu\text{m}$

$4.2 < M < 5 \text{ GeV}$ $460.8 \pm 20.0 \mu\text{m}$

tight up d_0^{svx} cut

$200 \mu\text{m} < |d_0^{\text{svx}}| < 800 \mu\text{m}$



$C\tau_{\text{fit}} = 429.2 \pm 9.0 \mu\text{m}$

Slicing on Run Section

A. 138425 ~ 150958

... good early run section

$$CT_{\text{fit}} = 424.8 \pm 12.8 \mu\text{m}$$

B. 150946 ~ 152590

... multi problem

$$CT_{\text{fit}} = 493.0 \pm 25.9 \mu\text{m}$$

C. 152595 ~ 154012

... bad alignment Section

$$CT_{\text{fit}} = 397.2 \pm 16.4 \mu\text{m}$$

D. 154013 ~

... run after alignment
problems fixed

$$CT_{\text{fit}} = 453.6 \pm 16.2 \mu\text{m}$$

Summary

We still can not find a cause of the problem.
Just have a few hints now...